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DOCKET NO.: 4916

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE MATTER OF THE APPLICATION FOR PATENT

OF: Manfred KREUZER

| ART UNIT:

SERIAL NO.: to be assigned - new

| CONF. NO.:

FILED: February 1, 2006

| EXAMINER:

FOR: Arrangement for Measuring the Torque of Rotating Machine  
Parts

PCT International Application: PCT/EP2005/002892

PCT International Filing Date: 18 March 2005

COMMISSIONER FOR PATENTS

P.O. BOX 1450

ALEXANDRIA, VA 22313-1450

February 1, 2006

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

- 1) Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98 applicant encloses a Form PTO-1449, copies of references AA to AC, AE and AF cited thereon, English abstracts for references AA, AC and AD, and the English version of the International Search Report issued on August 1, 2005 in the corresponding PCT International Application. A copy of reference AD is not (and need not be) enclosed, because it has been transmitted to the USPTO by the International Searching Authority in the International processing of this PCT application.

- 2) This Information Disclosure Statement is being filed simultaneously with the above identified new patent application.
- 3) References AB and AE are in English. Reference AA corresponds to AB, from which the relevance can be determined in English. References AA, AC and AD are accompanied by English Abstracts. Reference AA has been discussed at pages 2 and 3 of the present specification. Therefore no further discussion of these references is necessary.
- 4) Reference AC (DE 37 22 728) is accompanied by an English abstract. Furthermore, for determining the work produced by a person peddling a bicycle, the torque impulse and the angular speed of the crank are converted into electrical signals, which are then provided to an evaluating device. Strain gages are used to measure the deformation of a deformation element provided between the crank and the drive disc, as a measure of the applied force. The strain gages are circuit-connected to form a Wheatstone bridge, and the output voltage thereof is amplified and converted to a frequency signal that is inductively coupled or transmitted from the rotating crank side to the non-rotating frame side. The circuit arrangement includes a Wheatstone bridge of strain gages followed by a voltage amplifier and then a voltage to frequency converter, which in turn has its frequency output signal connected to a coil of the inductively coupled transmitter arrangement. See Figure 1.

- 5) Reference AD (DE 198 04 695) is accompanied by an English abstract. To measure the torque of a rotating machine part, a strain measuring bridge is arranged on the machine part, the voltage output of the bridge is amplified in an amplifier (12) and then converted to a frequency signal in a voltage-frequency converter (13). Then, the frequency signal having the form of a rectangular alternating voltage is transformed by a pulse former (14) into a sequence of short pulses, which are used as synchronizing pulses for a DC transformer or reverse converter (15). The short measurement pulses are inductively coupled through coils (16, 16', 16"). The output of the pulse former (14) is provided to a rectifier (17). Fig. 1 shows the rotor-side circuit arrangement, while Figs. 2 and 3 show alternative stator-side circuit arrangements.
- 6) Reference AF (U. Tietze et al., Halbleiter-Schaltungstechnik) discloses the general or basic concepts and structural arrangement of a phase-locked loop (PLL) as a follow-up synchronization circuit, for adjusting the frequency of an oscillator to match the frequency of a reference oscillator without a runaway phase shift therebetween.
- 7) Moreover, the enclosed Search Report indicates the degree of relevance of reference AD by category ( "A" means technological background). Thereby a concise explanation of the relevance has been provided (see MPEP §609).


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- 8) Note that the ~~W~~ritten ~~O~~pinion of the International Searching Authority (Form PCT-ISA-237) found that all PCT claims 1 to 3 satisfied all criteria for patentability, including novelty, inventiveness (non-obviousness), and industrial applicability (utility).
- 9) The Examiner is requested to consider all references of record, return an initialed copy of the enclosed Form PTO-1449 and ensure that all references of record are printed on any patent issuing from this application.
- 10) Favorable consideration and allowance of claims 1 to 3 are respectfully requested.

Respectfully submitted,  
Manfred KREUZER - Applicant

WFF:he/4916  
Enclosures:  
postcard,  
Form PTO-1449  
Engl. Version of Intern. Search Rep.  
5 references  
3 Engl. Abstracts

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<b>Sheet 1 of 1</b> <b>IDS LIST OF REFERENCES CITED</b> <b>BY APPLICANT</b> <b>(FORM PTO-1449)</b> <b>DATED: February 1, 2006</b>				Atty. Docket No.: 4916		Serial No.: <b>566884</b> to be assigned	
				Applicant: Manfred KREUZER			
				U.S. Filing Date: February 1, 2006		Art Unit:	
<b>U. S. PATENT DOCUMENTS</b>							
*EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	Cl.	Sub- Cl.	Fil. Date
<b>FOREIGN PATENT DOCUMENTS</b>							
		DOCUMENT NO.	DATE	COUNTRY	Cl.	Sub- Cl.	English
	AA	28 46 583	04/1980	Fed. Rep. of Germany	-	-	Abstract; = AB
	AB	2 037 995	07/1980	Great Britain	-	-	yes
	AC	37 22 728	12/1988	Fed. Rep. of Germany	-	-	Abstract
	AD	198 04 695	06/1999	Fed. Rep. of Germany	-	-	Abstract
	AE	1 081 480	03/2001	Europe	-	-	yes
<b>OTHER DOCUMENTS</b>							
	AF	U. Tietze and Ch. Schenk, Halbleiter-Schaltungstechnik (Semiconductor Circuit Technology), 9 <sup>th</sup> Edition, Springer-Verlag Berlin 1989, pps. 954 to 957					
EXAMINER'S SIGNATURE				DATE CONSIDERED			
<small>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</small>							

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